
Australian Securities Exchange Announcement**19 November 2018**

Highlights

- ❖ Bottle roll test work on gabbro rock crushed to 5.6mm lumps gives 71% V extraction after 45 days.
- ❖ These results currently support an alternative development plan for the vanadium-titanium-iron project at Speewah.
- ❖ This new project concept may involve on-site sulphuric acid vat or heap leaching and the processing of V_2O_5 , TiO_2 , iron oxide and other high purity products (vanadyl sulphate and high purity alumina).
- ❖ Project planning would also look at the merits of on-site production of acid, which produces surplus steam and energy.
- ❖ The adoption of a sulphuric leaching project at Speewah has the potential to enable scalability, and may reduce capital and operating costs, whilst increasing and diversifying product outputs and revenue opportunities.
- ❖ Laboratory testwork will involve laboratory vat and heap leach trials and continuing the hydrometallurgical processes to extract the products from sulphuric acid solutions, including solvent extraction, ion exchange, thermal hydrolysis and chemical precipitation methods.
- ❖ The next phase of pre-feasibility (PFS) work will examine the costings of beneficiation of various ROM lump sizes and coarse-grained concentrates, and also review in more detail the capital and operating costs for a vat or heap leach operation and sulphuric acid plant.
- ❖ Successful conclusion of these tests and studies will lead to the planned publication of a PFS Study in 2019.

King River Copper Limited (ASX: KRC) is pleased to provide this update on new metallurgical results from the company's 100% owned Speewah Vanadium Project ("SVP") in the East Kimberley of Western Australia. As reported in KRC's announcements on the 15 October 2018 and 1 November 2018, KRC has been conducting bottle roll tests on magnetite-ilmenite concentrate and coarse magnetite gabbro lumps from the high grade zone of the Central Vanadium deposit. The results of these initial tests are reported below together with an outline of how these results support a new development direction for the SVP to produce vanadium, titanium and iron products, along with other potential high value commodities.

The recently reported Vanadium Scoping Study demonstrated to KRC a viable business case with a healthy cash flow margin for a future development. This was based on conventional on-site beneficiation of fine grained concentrate and hydrochloric acid leach-solvent extraction (SX) refining at Wyndham producing vanadium pentoxide, titanium oxide and iron products (KRC ASX announcement 1 November 2018). While KRC was very encouraged by the results of the Vanadium Scoping Study using these conventional processing methods, the Board is committed to examining potentially lower capital and operating cost project development strategies that may also deliver a shorter development timeline.

Testwork and studies underway will examine the following SVP development plan:

- open pit mining of the large Central Vanadium deposit.
- beneficiation of lump magnetite gabbro or coarse magnetite-ilmenite concentrate.
- on-site sulphuric acid (H_2SO_4) vat or heap leach-SX processing of lump gabbro or coarse concentrate.
- production of high purity Vanadium Pentoxide powder ($>99.5 V_2O_5$) and standard grade Vanadium Pentoxide flake ($>98\% V_2O_5$), Titanium Dioxide products (pigment grade and high purity $>99\% TiO_2$), and iron oxide hematite (Fe_2O_3).

- production of other high purity-high value products, including Vanadyl Sulphate (used to manufacture Vanadium Electrolyte used in vanadium flow batteries), High Purity Alumina (HPA) products (used in the manufacture of LED and semiconductor substrates, scratch proof glass and lithium-ion battery separator coatings), Magnesium Oxide, and Pig Iron.
- on-site sulphuric acid plant to produce acid and steam for process heating and power generation or imported acid and contract power generation.
- in-pit waste disposal to optimise rehabilitation and reform the landscape to be assessed.

Bottle Roll Test Results

Nagrom is undertaking Bottle Roll leaching testwork on coarse crushed magnetite gabbro lumps (10mm, 5.6mm and 3.35mm) which is proceeding well. The samples are from the high grade zone of the Central deposit (SDH11-09 21-37.5m head grade 0.36% V₂O₅, Figure 1). Bottle roll testwork is about to commence on a -2mm coarse concentrate and will be reported later.

This testwork is designed to assess whether the Speewah magnetite gabbro is suitable for vat or heap leaching prior to scaling up to laboratory vat and column leach tests. The bottle roll tests will also help select the optimum particle size for vat or heap leach testwork, and whether the beneficiation plant will need to just crush and grind run-of-mine (ROM) material to coarse lumps or beneficiate to a coarse magnetite-ilmenite concentrate.

The results of the bottle roll tests obtained to date are discussed below:

10mm, 5.6mm and 3.35mm gabbro lump samples were leached under the same conditions as the previously reported concentrate test - 20% H₂SO₄, 20% pulp density, ambient temperature (18°C to 26.5°C), and continuous agitation. There has been no acid replenishment in these bottle roll tests. The sample tested is a crushed ¼ core composite of magnetite gabbro from the high grade zone of SDH11-09 21-37.5m with head grade of 0.36% V₂O₅, 3.65% TiO₂, 21.37% Fe₂O₃, 12.74% Al₂O₃, 8.36% CaO, 4.33% MgO and 44.75% SiO₂. The bottle rolls tests on P₁₀₀ 10mm and P₁₀₀ 5.6mm were stopped after 45 days and about 50% of the residue was washed and assayed to accurately estimate metal extractions, acid consumption and mass loss. Sample P₁₀₀ 3.35mm was not stopped as the test has been running for a shorter period; extractions have been estimated based on solution assays and certain assumptions of head grade, solution SG and volume losses. The results are summarised below:

Sample ID	Time (hours)	Time (days)	Extractions (%)							Mass Loss	Acid Consumption
			V	Fe	Ti	Mg	Al	Ca	Si	%	kg/t
P100 10mm	1081	45	59%	50%	15%	33%	22%	4%	1%	13.33	290
P100 5.6mm	1081	45	71%	57%	18%	37%	25%	3%	2%	15.77	358.6
*P100 3.35mm	670	28	69%	54%	15%	36%	23%	3%	3%	-	-

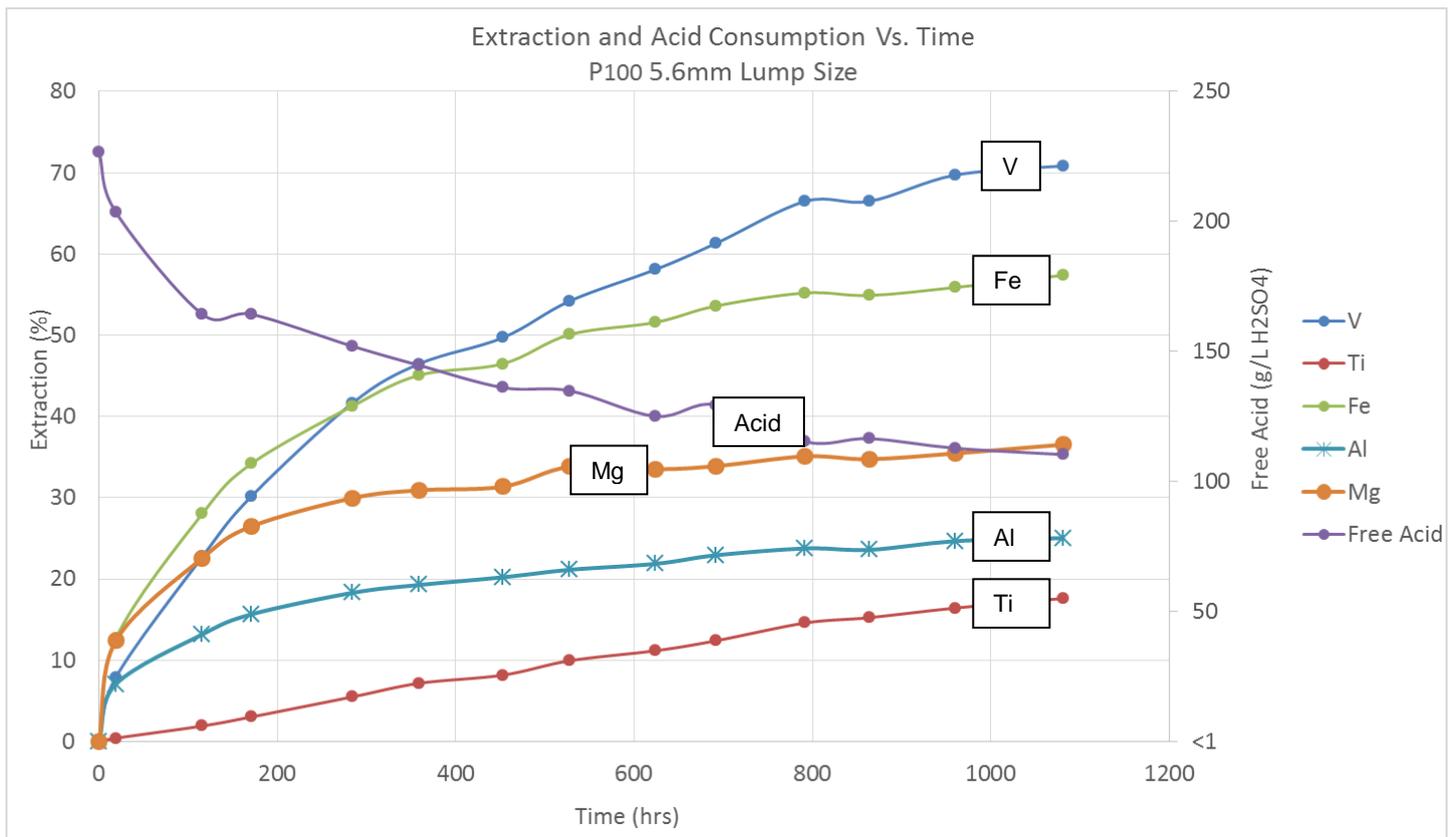
*P100 3.35mm - results based on solutions only.

The V and Ti leach efficiencies (extractions) are directly related to the lump size for the same time interval. The 3.35mm test result is very similar to that obtained from the 106mm magnetite concentrate for the same time period (see KRC ASX release 15 October 2018).

The photographs below show P₁₀₀ 10mm lump magnetite gabbro before and after the 45 day bottle roll acid leach.



The leach plots of V and Ti extractions vs time still have positive slopes indicating the leaching process had not completed after 45 days (see graph below for 5.6mm lump size result). Most of the Al and Mg extraction occurs early in the leach profile suggesting that the more soluble alteration and rock rocking minerals dissolve more readily then show very little extra extraction.



The residues from the P100 10mm and 5.6mm have been replenished with acid and restarted bottle roll leaching and the final results will be reported on completion along with the 3.35mm sample test.

Concentrate Testwork

Nagrom has produced a P_{100} -2mm concentrate from a high grade zone core sample of the Central deposit (SDH11-09 21-37.5m, head grade 0.36% V_2O_5 , 3.65% TiO_2 , 21.37% Fe_2O_3 , Figure 1). The -2mm sample was subjected to LIMS or MIMS magnetic separation methods at different magnetic strengths to maximise V and Ti recovery into the magnetite-ilmenite concentrate and reject a high proportion of the ROM feed at the -2mm grain size. This testwork has given the following results:

Magnetic Strength	Mass Yield	Grades			Recoveries		
		V_2O_5	TiO_2	Fe	V_2O_5	TiO_2	Fe
Gauss (G)	%	%	%	%	%	%	%
LIMS 1200	42.19	0.59	5.9	19.87	68.24	67.66	55.51
MIMS 3000	74.44	0.44	4.48	16.65	91.46	92.59	83.39

A 2000 Gauss test is underway. The results will be used to select the sample for bottle roll testwork, and beneficiation plant design and project costings. The potential advantage of using a coarse -2mm concentrate for a heap or vat leach operation is to reduce the amount of material leached and shorten the leach time. In addition, the beneficiation plant is a much simpler design to that used in the Scoping Study to make a 106 micron concentrate with potential capital and operating cost savings. If lump material is used, then there will be no magnetic separation circuit.

Refining Processing of V, Ti and Fe Products

TSW Analytical Pty Ltd (TSW Analytical) is undertaking sulphuric acid leaches on 106 micron concentrate samples to make vanadium pentoxide, titanium dioxide, iron oxide and vanadyl sulphate products initially trialing solvent extraction and chemical precipitation methods. This work is ongoing and results will be reported separately.

New SVP Plan

Items to be addressed in the new SVP Plan include:

- ❖ Complete the Bottle Roll testwork on the 10mm, 5.6mm and 3.35mm lump samples and the -2mm coarse concentrate to assess V, Ti, Fe, Al and Mg leach efficiency (extraction), leach time, acid consumption, mass loss, and pre- and post-leach sizing analysis.
- ❖ Undertake Vat and/or Column Leach testwork on the preferred sample size, including testing the effects of agglomeration, changes in the temperature and acid concentrations, and other design modifications, on leach recoveries, leach times and acid consumption.
- ❖ Beneficiation Plant design and capital and processing cost estimates for lump and coarse-grained concentrate options.
- ❖ Capital and operating costs for Vat Leach or Heap Leach operations.
- ❖ Options analysis into the capital and operating costs for an on-site Sulphuric Acid Plant compared to importing acid and contract diesel power generation, including the supply, port access and transport of sulphur and sulphuric acid.
- ❖ Further Hydrometallurgical Process Flow Sheet development trialing solvent extraction, ion exchange, thermal hydrolysis and chemical precipitation methods. Recovery of sulphur values as sulphur dioxide (SO_2) from ferrous sulphate ($FeSO_4$) by thermal roasting is an important part of the process as it has the potential to reduce the sulphuric acid requirement.

Once these items have been addressed, KRC will complete a Prefeasibility Study into the preliminary economics of the SVP suitable for release to the market in accordance with the reporting requirements for production targets and forward looking statements. The modifying factors listed in the JORC 2012 Code will be considered to address the Material Assumptions for the Prefeasibility Study.

Directors Comments

The Board recognises that while the new bottle roll and vat/column leach testwork programme is still at an early stage, these initial results on lump rock are most encouraging and now graduate this model of process route to our most preferred.

The potential of using a coarse 2mm concentrate for a heap or vat leach operation is now under review as test results demonstrate it would reduce the amount of material leached by ~50% and potentially shorten leach times.

A 2mm concentrate beneficiation plant would be a simpler design to the facility used in the recently released Vanadium Scoping Study that generated a 106 micron (~1/10th of a mm) concentrate with the potential flow on of capital and operating cost savings.

Alternatively, if lump ROM material was chosen in coming months to be the most economic option to be used in the PFS, then there will be no magnetic separation circuit required at all.

During 2019, KRC aims to present shareholders with the most prudent commercial strategy to develop the Speewah vanadium resources and advance towards the production of Vanadium, Titanium and Iron products at the lowest unit cost.

Anthony Barton

Chairman

King River Copper Limited

Statement by Competent Person

The information in this report that relates to Exploration Results, Mineral Resources, Metallurgy and Previous Studies is based on information compiled by Ken Rogers (BSc Hons) and fairly represents this information. Mr. Rogers is the Chief Geologist and an employee of King River Copper Ltd, and a Member of both the Australian Institute of Geoscientists (AIG) and The Institute of Materials Minerals and Mining (IMMM), and a Chartered Engineer of the IMMM. Mr. Rogers has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Rogers consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

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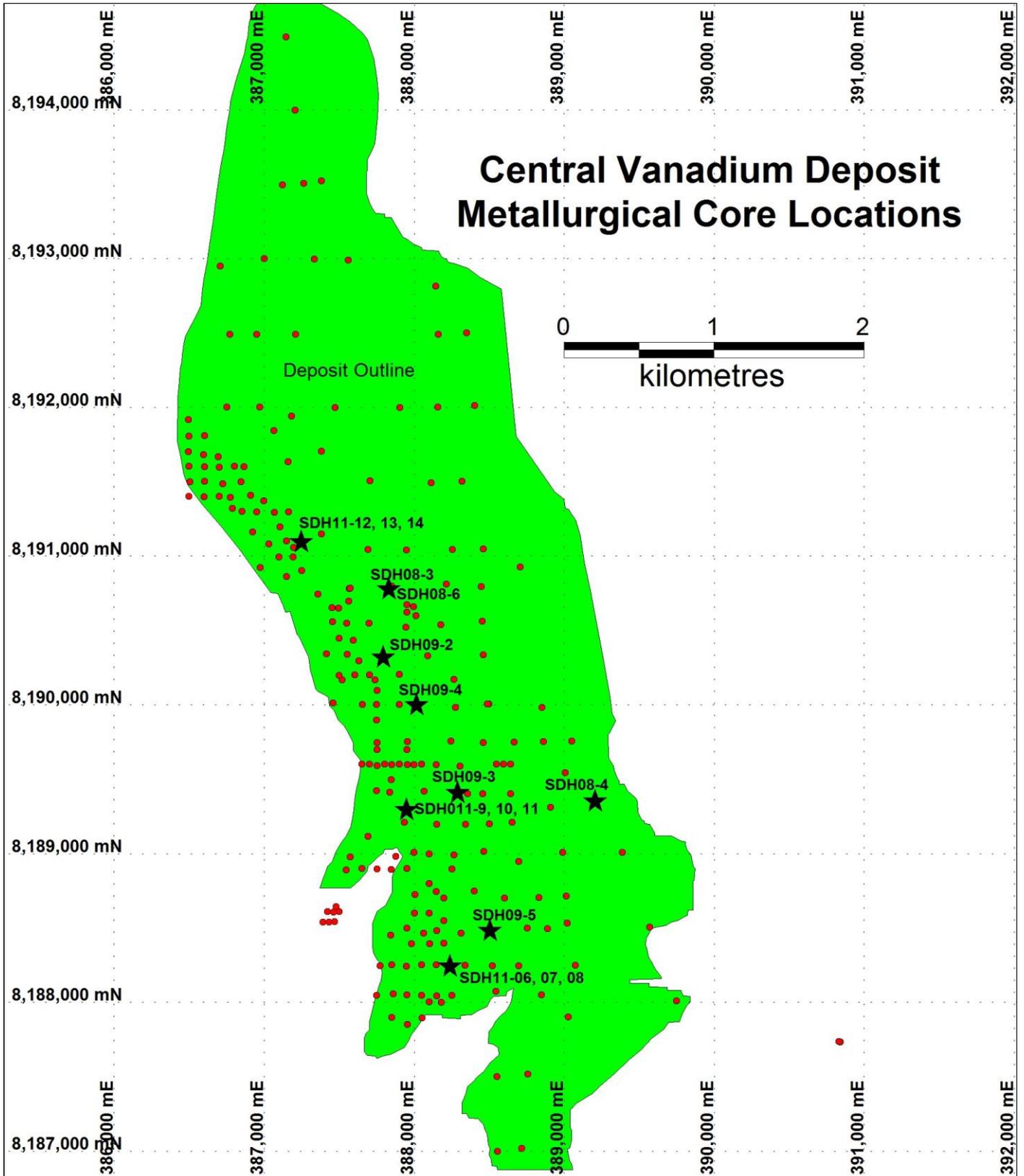


Figure 1: Diamond core hole locations (black stars) and Reverse Circulation drill holes (red dots) within the Central Vanadium Deposit, including metallurgical core holes SDH08-06 and SDH11-09 referred to in this announcement. Diamond core hole collar data given in Table 1.

Table 1: Diamond core holes drilled in the Central deposit

Hole_id	Deposit	East_GDA	North_GDA	RL	Depth	Dip	Azimuth	Tenement
		m	m	m	m	degrees	degrees	
SDH08-3	Central	387830.42	8190778.6	197.037	80	-90	0	E80/2863
SDH08-4	Central	389203.71	8189358.8	190.014	75	-90	0	E80/2863
SDH08-6	Central	387831.84	8190783.9	197.187	450.5	-90	0	E80/2863
SDH09-2	Central	387793.53	8190327.7	196.267	50	-90	0	E80/2863
SDH09-3	Central	388287.08	8189417.5	189.987	70.5	-90	0	E80/2863
SDH09-4	Central	388016.74	8190007.5	194.698	42.1	-90	0	E80/2863
SDH09-5	Central	388502.3	8188487.8	186.4	57.1	-90	0	E80/2863
SDH11-06	Central	388234.08	8188240.6	188.018	39.4	-90	0	E80/2863
SDH11-07	Central	388234.04	8188243.7	187.999	41.6	-90	0	E80/2863
SDH11-08	Central	388234.08	8188246.9	187.941	40.9	-90	0	E80/2863
SDH11-09	Central	387946.28	8189294	191.676	40.9	-90	0	E80/2863
SDH11-10	Central	387945.75	8189295.9	191.643	39.4	-90	0	E80/2863
SDH11-11	Central	387945.33	8189297.8	191.706	40.9	-90	0	E80/2863
SDH11-12	Central	387243.47	8191101.7	212.529	41	-90	0	E80/2863
SDH11-13	Central	387242.63	8191101.2	212.467	41	-90	0	E80/2863
SDH11-14	Central	387241.65	8191100.6	212.457	40.1	-90	0	E80/2863

Appendix 1: King River Copper Limited Speewah Project JORC 2012 Table 1

SECTION 1 : SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code explanation	Commentary
<p><i>Sampling Techniques</i></p>	<p><i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i></p>	<p>This ASX Release dated 19 November 2018 reports on further metallurgical testwork on samples from the Central Vanadium deposit at KRC's Speewah Project.</p> <p><i>RC and Diamond Core Samples</i></p> <p>134 Reverse Circulation (RC) holes (5,268 metres) and 30 diamond (DD) core holes are within the modelled mineralisation envelopes of the Mineral Resource estimates. RC chip samples were used in previous beneficiation and variability metallurgical testwork completed in 2006-2011.</p> <p>A 28.42kg composite of 12 RC holes was used in the initial beneficiation and microleach tests reported in 2017 (KRC ASX announcement 21 August 2017).</p> <p>16 HQ DD core holes were drilled in the Central Vanadium deposit (see Figure 1 and Table 1 for locations).</p> <p>Two of these core holes from the high grade zone (SDH08-06 - 42.66m-59.45m and SDH11-09 - 21-37.5m) have been used in the beneficiation and hydrometallurgical metallurgical tests reported in this announcement.</p> <p>A 29.47kg composite magnetite gabbro sample of HQ ¼ core from the high grade zone of drillhole SDH08-06 at 42.66-59.45m downhole was used to make a 106µm and 120µm concentrates used in previous hydrometallurgical test work and testwork underway. The head assays of this sample is 0.393% V₂O₅, 3.561% TiO₂ and 21.225% Fe₂O₃.</p> <p>A 60kg composite magnetite gabbro sample of HQ ¼ core from the high grade zone of drillhole SDH11-09 – 21-37.5m downhole has been used in the beneficiation and bottle roll metallurgical tests reported in this announcement. The head grade of this sample is 0.36% V₂O₅, 3.65% TiO₂, 21.37% Fe₂O₃, 12.74% Al₂O₃, 8.36% CaO, 4.33% MgO and 44.75% SiO₂.</p> <p><i>Metallurgical Bottle Roll Samples:</i></p> <p>Nagrom bottle roll test used 500g subsamples of a 60kg composite sample of ¼ core from the high grade zone interval of diamond core hole SDH11-09 21-37.5m, crushed to lump sizes of 10mm, 5.6mm and 3.35mm. Bottle roll tests used 500g of lump material leached in 20% H₂SO₄ at ambient temperature (18° to 26.5°C), at 20% pulp density and with continuous agitation. Interim results are reported after 45 and 28 days.</p> <p><i>Metallurgical Concentrate Samples:</i></p> <p>Nagrom magnetic separation test used a 10kg subsample of a 60kg sample of ¼ core from the high grade zone interval of diamond core hole SDH11-09 21-37.5m, crushed and ground to P100 2mm. Magnetic separation methods were 1200G LIMS and 3000G MIMS to produce a coarse grained concentrate for future bottle roll testwork.</p>

<p><i>Sampling Techniques (continued)</i></p>		<p><i>Metallurgical Hydrometallurgical Samples:</i> Nagrom produced a magnetite concentrate from SDH08-6 drill core using a MIMS-cleaner MIMS-recleaner LIMS test circuit and produced a concentrate with a grain size of P₈₀ 106 microns that assayed 1.7% V₂O₅, 15.37% TiO₂ and 60.04% Fe₂O₃, with 14.49% SiO₂, 4.02% Al₂O₃, 3.77% CaO and 2.35% MgO. TSW has leached this concentrate sample using 45% sulphuric acid at 10% pulp density, heated to 90°C and stirred for 4 hours. It reported 97% V and 86.6% Fe leach efficiencies but lower titanium (58.1%). The leachate will be used for hydrometallurgical extraction testwork using solvent extraction, ion exchange and chemical precipitation methods to separate V₂O₅, TiO₂ and Fe₂O₃ products.</p>
<p><i>Drilling techniques</i></p>	<p><i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</i></p>	<p>RC using a 5.75" hammers and diamond (NQ and HQ3 size) drilling were completed to support the preparation of the Mineral Resource estimate. Holes drilled vertical. Metallurgical testwork completed on ¼ HQ3 core composite samples from two metallurgical diamond drill core holes (Figure 1 and Table 1):</p> <ul style="list-style-type: none"> • SDH08-06 42.66m-59.45m (High Grade Zone), and • SDH11-09 6-16m (Low Grade Zone) and 21-37.5m (High Grade Zone).
<p><i>Drill sample recovery</i></p>	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p>	<p>No qualitative recovery data was recorded. Qualitative examination and photography suggested RC and diamond recoveries are very high. Good ground conditions exist which suggests recovery is likely to be very high.</p>
	<p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p>	<p>HQ3 (triple tube) drilling was used to maximise diamond sample recovery.</p>
	<p><i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></p>	<p>No relationship between grade and recovery has been identified.</p>
<p><i>Logging</i></p>	<p><i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></p>	<p>DD core and RC chips were geologically logged, with descriptions of mineralogy and lithology noted.</p>
	<p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i></p>	<p>Logging was generally qualitative in nature. DD core photographed wet.</p>
	<p><i>The total length and percentage of the relevant intersections logged.</i></p>	<p>SDH08-06 - 0-450.5m, 100% logged. SDH11-09 – 0-40.9m, 100% logged.</p>
<p><i>Sub-sampling techniques and sample preparation</i></p>	<p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p>	<p>DD core was cut in half with a core saw. Some half sections sawn in quarters. ¼ core used in testwork.</p>
	<p><i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i></p>	<p>Not applicable as samples used in the reported testwork were DD core.</p>
	<p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p>	<p>Whole continuous lengths of DD ¼ core samples collected, composited and used in testwork. These were collected to represent the composite intervals of both the High Grade and Low Grade Zones.</p>
	<p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p>	<p>Subsampling is performed during the preparation stage according to the metallurgical laboratories' internal protocol.</p>
	<p><i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i></p>	<p>Use of DD core in metallurgical testwork gives a continuous insitu sample. HQ3 triple tube ensures high recovery rates. DD core twinned previous RC drill holes. Whole sample interval used in testwork.</p>
<p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p>Sample sizes are considered appropriate to the grain size of the material being sampled.</p>	

<p><i>Quality of assay data and laboratory tests</i></p>	<p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p>	<p>TSW Testwork Testwork includes sulphuric acid leaches, evaporation under reflux conditions, chemical precipitation and planned solvent extraction tests. Assays are conducted on leach solutions and solid residues. Further Fe₂O₃, TiO₂ and V₂O₅ extraction tests are underway and planned. TSW Analytical is a well-established analytical service provider that has developed a reputation for producing accurate analyses for complex samples. The company's expertise has assisted with the development of hydrometallurgical flow-sheets for multi-element ore concentrates. The titaniferous vanadiferous magnetite concentrate (supplied by the client) and leach residues have been assayed using ICP-AES and ICP-MS. Samples were fused in a lithium borate flux, the resultant glass bead was dissolved in hydrochloric acid and suitably diluted for either ICP-MS or ICP-AES analysis. Loss on Ignition (LOI) at 1000 °C was performed for completeness of the analytical data and to give a better indication of the total analytical percentage approximation to 100%. The leach solutions and wash liquors have been analysed using ICP-AES and ICP-MS. The samples were diluted suitably for the appropriate ICP based analysis. Dilutions are used to bring the analyte concentration into the optimum analytical range of the ICP instrument used and to reduce matrix interference complications during quantification. Leach efficiency has been determined using the mass of the total analyte in the leach residue divided by the mass of the total analyte in the initial titaniferous vanadiferous magnetite concentrate used. The resulting fraction is multiplied by 100 to give a percent leach efficiency. TSW Analytical uses in-house standards and Certified Reference Materials (CRMs) to ensure data are "Fit-For-Purpose".</p> <p>Nagrom Testwork Nagrom produced a magnetite-ilmenite concentrate by a combination of Medium Intensity Magnetic Separation (MIMS) and Low Intensity Magnetic Separation (LIMS) tests to be used for hydrometallurgical tests. All solid samples have been analysed via XRF. The prepared sample is fused in a lithium borate flux with a lithium nitrate additive. The resultant glass bead is analysed by XRF. Loss on Ignition (LOI) is also conducted to allow for the determination of oxide totals. All solution samples are diluted and then analysed by ICP. Dilutions bring the concentration level to within the analytical range of the ICP instruments. Diluents are matched to sample matrix.</p>
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	<p><i>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></p> <p><i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></p>	<p>No geophysical data was collected.</p> <p>TSW Analytical Concentrations are reported as micrograms per gram (µg/g) in the solid unless otherwise stated, Instrumental response is measured against AccuTrace High Purity multi-element standards (Choice Analytical) to achieve quantitation. Data are subjected to in-house QA and QC procedures where an independent analyst recalculates instrumental output and compares the newly generated data set with the original. Lack of equivalence between the two data sets triggers an internal review and if necessary re-analysis of the entire data set. Under these circumstances a third independent analyst will assess all generated data prior to sign off. Initial equivalence between the two data sets, generated by the analyst and reviewer, will clear data for remittance to the customer. All reports are reviewed by an independent analyst prior to submission to the customer and where necessary relevant changes, such as wording that may give rise to possible ambiguity of interpretation, will be modified prior to the final report being sent to the customer.</p> <p>Nagrom is certified to a minimum of ISO 9001:2008.</p>
Verification of sampling and assaying	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p>	<p>Significant intersections have been verified by alternative company personnel.</p> <p>All metallurgical DD core holes twinned previous RC holes. SDH08-06 was drilled twice. SDH11-09 has been twinned by SDH11-10 and SDH11-11 (see Figure 1 and Table 1) which is being used in current bottle roll testwork.</p>
	<p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p>	<p>Templates have been set up to facilitate geological logging. Prior to the import into the central database, logging data is validated for conformity and overall systematic compliance by the geologist. Assay results are received from the laboratory in digital format. Assays, survey data and geological logs incorporated into a database.</p>
	<p><i>Discuss any adjustment to assay data.</i></p>	<p>No adjustments or calibrations will be made to any primary assay data collected for the purpose of reporting assay grades and mineralised intervals.</p>
	<p><i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i></p>	<p>Almost 90% of the collars used in the resource estimate have been surveyed using a differential global positioning system (DGPS) instrument, with the remaining surveyed using a hand-held GPS. Downhole deviations have been measured by downhole survey instruments on 3 holes only using a Globaltech Pathfinder digital downhole camera. All but four holes are vertical. All metallurgical holes are vertical. The vertical and shallow nature of the drilling means that the absence of downhole surveys is not considered a material risk.</p>
Location of data points	<p><i>Specification of the grid system used.</i></p>	<p>The adopted grid system is GDA 94 Zone 52.</p>
	<p><i>Quality and adequacy of topographic control.</i></p>	<p>A topographic file provided by KRC was calibrated for use in the Mineral Resource estimate using DGPS and GPS collar data. The Competent Person considers that the topography file is accurate given the use of DGPS data in the Mineral Resource area.</p>

<i>Data spacing and distribution</i>	<i>Data spacing for reporting of Exploration Results.</i>	RC drill spacing is mostly 250 m by 250 m at the Central deposit, closing down to 100 m by 100 m in the western area (see Figure 1). Metallurgical DD core holes are spaced about 500 m apart (see Figure 1).
	<i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>	The Competent Person believes the mineralised domains have sufficient geological and grade continuity to support the classification applied to the Mineral Resources given the current drill pattern.
	<i>Whether sample compositing has been applied.</i>	Metallurgical samples were composited to represent the High Grade and Low Grade Zones within the magnetite gabbro and within the resource envelope. This was considered appropriate given the metallurgical testwork was designed to test the lower and high grade zones of the mineralisation and it provided for a bulk sample suitable for the testwork.
<i>Orientation of data in relation to geological structure</i>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	All metallurgical DD core holes are vertical. This allows the holes to intersect the mineralisation at a high-angle as the magnetite gabbro has a very shallow dip to the east.
	<i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i>	The relationship between the drilling orientation and the orientation of key mineralised structures is not considered to have introduced a sampling bias.
<i>Sample security</i>	<i>The measures taken to ensure sample security.</i>	Chain of Custody is managed by the Company until samples pass to a duly certified metallurgical laboratory for subsampling, assaying, beneficiation and hydrometallurgical test work. The RC assay pulp bags are stored on secure sites and delivered to the metallurgical laboratory by the Company or a competent agent. The chain of custody passes upon delivery of the samples to the metallurgical laboratory.
<i>Audits or Reviews</i>	<i>The results of any audits or reviews of sampling techniques and data.</i>	No external audits have been completed.

SECTION 2 : REPORTING OF EXPLORATION RESULTS

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<p><i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></p> <p><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></p>	<p>The Speewah Project comprises 12 Exploration Licences, three Mining Leases and two Miscellaneous Licences. Details are listed in Table 1 Schedule of Tenements held at 30 June 2018 reported previously in the June Quarterly Report. The Speewah test work reported in this announcement are from samples collected entirely within E80/2863. The tenements are 100% owned by Speewah Mining Pty Ltd (a wholly owned subsidiary of King River Copper Limited), located over the Speewah Dome, 100km SW of Kununurra in the East Kimberley. The tenements are in good standing and no known impediments exist. No Native Title Claim covers the areas sampled and drilled. The northern part of the tenements (but not E80/2863) is in the Kimberley Heritage Area.</p>
<i>Exploration done by other parties</i>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	No exploration completed by other parties is relevant for the metallurgical testwork and Mineral Resource estimates reported herein.
<i>Geology</i>	<i>Deposit type, geological setting and style of mineralisation.</i>	<p>The ferrovanadium titanium (Ti-V-Fe) deposits represent part of a large layered intrusion (the Hart Dolerite), which was intruded c1790 Ma into the Palaeo-Proterozoic sediments and minor volcanics of the 1814 Ma Speewah Group in the East Kimberley Region of Western Australia.</p> <p>The deposits occur within the Speewah Dome, which is an elongated antiform trending N-S. The dome is about 30 km long and attains a maximum width of about 15 km. The Hart Dolerite sill forms the core of the dome.</p> <p>Since the deposit discovery in 2006, at least two distinct types of felsic granophyres and three mafic gabbros have been identified in the Hart Dolerite as follows:</p> <ul style="list-style-type: none"> • K felsic granophyre (youngest) • Mafic granophyre • Pegmatoidal gabbro • Magnetite gabbro (host unit) • Felsic gabbro (oldest). <p>The vanadium-titanium mineralisation is hosted within a magnetite bearing gabbro unit of the Hart Dolerite, outcropping in places and forming a generally flat dipping body that extends over several kilometres of strike and width. The layered sill is up to 400m thick containing the magnetite gabbro unit which is up to 80m thick.</p> <p>Given the mode of formation, mineralisation displays excellent geological and grade continuity which was considered when classifying the Mineral Resource estimate. Exposure is limited and fresh rock either outcrops or is at a shallow depth of a few metres.</p> <p>Ti-V-Fe mineralisation occurs as disseminations of vanadiferous titanomagnetite and ilmenite.</p> <p>Within the tenements the vanadium deposits have been divided into three deposits – Central, Buckman and Red Hill. The test work reported in this announcement was sampled from the Central vanadium deposit (Figure 1).</p>

<i>Drill hole information</i>	<p>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</p> <ul style="list-style-type: none"> • easting and northing of the drill hole collar • elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar • dip and azimuth of the hole • down hole length and interception depth • hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	<p>New exploration results are not being reported.</p> <p>Locations of diamond (DD) core holes, including metallurgical core holes used in this announcement, are shown on Figure 1 and Table 1.</p>
<i>Data aggregation methods</i>	<p>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</p>	<p>Exploration results are not being reported.</p>
	<p>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</p>	<p>Continuous lengths of ¼ core composited for metallurgical samples from the Low Grade and High Grade Zones.</p>
	<p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	<p>No metal equivalent values are used for reporting.</p>
<i>Relationship between mineralisation widths and intercept lengths</i>	<p>These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</p>	<p>Due to the very shallow dip of the mineralisation, the vertical metallurgical DD core holes represent almost the true width of the mineralisation.</p>
<i>Diagrams</i>	<p>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</p>	<p>Figure 1 shows the location of diamond core holes within the Central Vanadium deposit referred to in this announcement.</p>
<i>Balanced reporting</i>	<p>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</p>	<p>Reports on previous metallurgical results can be found in ASX Releases that are available on our website, including announcements 1 April 2010, 15 July 2010, 9 November 2010, 8 February 2012, 21 April 2017, 21 August 2017, 9 October 2017, 4 December 2017, 30 January 2018, 27 February 2018, 21 March 2018, 25 June 2018, 23 July 2018 and 15 October 2018.</p>
<i>Other substantive exploration data</i>	<p>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</p>	<p>Updated vanadium resource estimates in accordance with the JORC 2012 guidelines were reported in KRC ASX announcement 26 May 2017.</p>
<i>Further work</i>	<p>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</p>	<p>Further metallurgical tests are planned to increase metal recoveries, shorten leach times and reduce acid consumption, and trialing selective chemical precipitation, thermal hydrolysis, ion exchange and solvent extraction methods to precipitate vanadium pentoxide and titanium dioxide, and make vanadium electrolyte.</p>